

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	80234	("222").CLAS.	US-PGPUB; USPAT	OR	OFF	2006/04/12 09:39
S2	0	S1 and electrode and pressurized adj chamber	US-PGPUB; USPAT	OR	ON	2006/04/12 09:40
S3	533	S1 and electrode and pressur\$4	US-PGPUB; USPAT	OR	ON	2006/04/12 09:40
S4	65	S1 and electrode and pressur\$4 and diaphragm	US-PGPUB; USPAT	OR	ON	2006/04/12 09:40
S5	32	S1 and electrode and pressur\$4 and diaphragm and nozzle	US-PGPUB; USPAT	OR	ON	2006/04/12 09:40
S6	0	S1 and electrode and pressur\$4 and diaphragm and nozzle and drive adj pulse	US-PGPUB; USPAT	OR	ON	2006/04/12 09:57
S7	1	fujii.in. and dispensing adj device . ti.	US-PGPUB; USPAT	OR	ON	2006/04/12 09:41
S8	32	S1 and electrode and pressur\$4 and diaphragm and nozzle	US-PGPUB; USPAT	OR	ON	2006/04/12 09:59
S9	70159	("422").CLAS.	US-PGPUB; USPAT	OR	OFF	2006/04/12 09:58
S10	4	S1 and S9 and electrode and pressur\$4 and diaphragm and nozzle	US-PGPUB; USPAT	OR	ON	2006/04/12 09:59
S11	121	(S1 S9) and electrode and pressur\$4 and diaphragm and nozzle	US-PGPUB; USPAT	OR	ON	2006/04/12 09:59
S12	1	(S1 S9) and electrode and pressur\$4 and diaphragm and nozzle and drive adj pulse	US-PGPUB; USPAT	OR	ON	2006/04/12 09:59
S13	121	(S1 S9) and electrode and pressur\$4 and diaphragm and nozzle	US-PGPUB; USPAT	OR	ON	2006/04/12 10:00
S14	48	(S1 S9) and electrode and pressur\$4 and diaphragm and nozzle and dispens\$3	US-PGPUB; USPAT	OR	ON	2006/04/12 10:37
S15	5090	nozzle and dispens\$3 and elastic	US-PGPUB; USPAT	OR	ON	2006/04/12 10:38
S16	1779	nozzle and dispens\$3 and (elastic\$3 deform\$3) and electrode	US-PGPUB; USPAT	OR	ON	2006/04/12 10:39
S17	45	nozzle and dispens\$3 and (elastic\$3 deform\$3) and electrode and drive adj pulse	US-PGPUB; USPAT	OR	ON	2006/04/12 10:44
S18	1	nozzle and dispens\$3 and (elastic\$3 deform\$3) and electrode and drive adj pulse and defect\$3	US-PGPUB; USPAT	OR	ON	2006/04/12 10:44

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S19	32	nozzle and dispens\$3 and (elastic\$3 deform\$3) and electrode and drive adj pulse and clog\$4	US-PGPUB; USPAT	OR	ON	2006/04/12 10:50
S20	0	nozzle and dispens\$3 and (elastic\$3 deform\$3) and electrode and drive adj pulse and clog\$4 with detect\$3	US-PGPUB; USPAT	OR	ON	2006/04/12 10:51
S21	163	nozzle and dispens\$3 and clog\$4 with detect\$3	US-PGPUB; USPAT	OR	ON	2006/04/12 10:51
S22	4	nozzle and dispenser.ti. and clog\$4 with detect\$3	US-PGPUB; USPAT	OR	ON	2006/04/12 11:16
S23	4	nozzles and dispenser.ti. and clog\$4 with detect\$3	US-PGPUB; USPAT	OR	ON	2006/04/12 11:26
S24	22	nozzles and dispens\$3.ti. and clog\$4 with detect\$3	US-PGPUB; USPAT	OR	ON	2006/04/12 14:58
S25	94	nozzles and dispens\$3.ti. and monitor\$3 same replac\$5	US-PGPUB; USPAT	OR	ON	2006/04/12 15:00
S26	42	nozzles and dispens\$3.ti. and monitor\$3 with replac\$5	US-PGPUB; USPAT	OR	ON	2006/04/12 15:00
S27	2	nozzles and dispens\$3.ti. and monitor\$3 with replac\$5 with nozzle	US-PGPUB; USPAT	OR	ON	2006/04/12 15:00
S28	99177	("340").CLAS.	US-PGPUB; USPAT	OR	OFF	2006/05/17 14:19
S29	2895	S28 and dispens\$3	US-PGPUB; USPAT	OR	ON	2006/05/17 14:19
S30	36	S28 and dispens\$3 with (malfunc\$4 defect\$4)	US-PGPUB; USPAT	OR	ON	2006/05/17 15:53
S31	0	S28 and dispens\$3 with (malfunc\$4 defect\$4) same non adj defective	US-PGPUB; USPAT	OR	ON	2006/05/17 15:53
S32	5	S28 and dispens\$3 with (malfunc\$4 defect\$4) and (array matrix matrice)	US-PGPUB; USPAT	OR	ON	2006/05/17 15:55
S33	0	S28 and dispens\$3 with (malfunc\$4 defect\$4) same (array matrix matrice)	US-PGPUB; USPAT	OR	ON	2006/05/17 16:02
S34	7	S28 and dispens\$3 with (malfunc\$4 defect\$4) same (second replacement backup spare reserve)	US-PGPUB; USPAT	OR	ON	2006/05/17 16:14
S35	1	S28 and dispens\$3 with (malfunc\$4 defect\$4) same (another replacement backup spare reserve)	US-PGPUB; USPAT	OR	ON	2006/05/17 16:06
S36	81	dispens\$3 with (malfunc\$4 defect\$4) same (another replacement backup spare reserve)	US-PGPUB; USPAT	OR	ON	2006/05/17 16:12

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S37	6	(fluid liquid) with dispens\$3 with (malfunc\$4 defect\$4) same (another replacement backup spare reserve)	US-PGPUB; USPAT	OR	ON	2006/05/17 16:14
S38	80558	("222").CLAS.	US-PGPUB; USPAT	OR	OFF	2006/05/17 16:14
S39	2895	S28 and S29	US-PGPUB; USPAT	OR	OFF	2006/05/17 16:14
S40	36	S39 and dispens\$3 with (malfunc\$4 defect\$4)	US-PGPUB; USPAT	OR	ON	2006/05/17 16:14
S41	425	S39 and (malfunc\$4 defect\$4)	US-PGPUB; USPAT	OR	ON	2006/05/17 16:15
S42	18	S39 and (malfunc\$4 defect\$4) near3 (dispens\$3 nozzle)	US-PGPUB; USPAT	OR	ON	2006/05/17 16:19
S43	6	S39 and (malfunc\$4 defect\$4) near3 (dispens\$3 nozzle) same (another second replacement backup spare reserve)	US-PGPUB; USPAT	OR	ON	2006/05/17 16:27
S44	5	(fluid liquid) with dispens\$4.ti. and (malfunc\$4 defect\$4) near3 (dispens\$3 nozzle) same (another second replacement backup spare reserve)	US-PGPUB; USPAT	OR	ON	2006/05/17 17:35
S45	0	(fluid liquid) with dispens\$4.ti. and (malfunc\$4 defect\$4) near3 (dispens\$3 nozzle) same (another second replacement backup spare reserve) adj (dispens\$3 nozzle)	US-PGPUB; USPAT	OR	ON	2006/05/17 17:35
S46	0	(fluid liquid) with dispens\$4 same (malfunc\$4 defect\$4) near3 (dispens\$3 nozzle) same (another second replacement backup spare reserve) adj (dispens\$3 nozzle)	US-PGPUB; USPAT	OR	ON	2006/05/17 17:36
S47	0	(fluid liquid) with dispens\$4 same (malfunc\$4 defect\$4) near3 (dispens\$3 nozzle) same (another second replacement backup spare reserve) adj (dispens\$3 nozzle)	EPO; JPO	OR	ON	2006/05/17 17:36
S48	0	(fluid liquid) with dispens\$4 same (malfunc\$4 defect\$4) near3 (dispens\$3 nozzle) same (another second replacement backup spare reserve) adj (dispens\$3 nozzle)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/17 17:37

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S49	1	(fluid liquid) with (dispens\$4 nozzle) same (malfunc\$4 defect\$4) near3 (dispens\$3 nozzle) same (another second replacement backup spare reserve) adj (dispens\$3 nozzle)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/17 17:38
S50	43	(dispens\$4 nozzle) same (malfunc\$4 defect\$4) near3 (dispens\$3 nozzle) same (another second replacement backup spare reserve) adj (dispens\$3 nozzle)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/17 17:38
S51	36	(dispens\$4 nozzle) same (malfunc\$4 defect\$4) near3 (dispens\$3 nozzle) same (another second replacement backup spare reserve) adj (dispens\$3 nozzle)	US-PGPUB; USPAT	OR	ON	2006/05/17 17:39
S52	36	(dispens\$4 nozzle) with (malfunc\$4 defect\$4) near3 (dispens\$3 nozzle) same (another second replacement backup spare reserve) adj (dispens\$3 nozzle)	US-PGPUB; USPAT	OR	ON	2006/05/17 17:39
S53	11876	array with nozzle	US-PGPUB; USPAT	OR	ON	2006/05/18 09:29
S54	70594	("422").CLAS.	US-PGPUB; USPAT	OR	OFF	2006/05/18 09:30
S55	292	S53 and S54	US-PGPUB; USPAT	OR	OFF	2006/05/18 09:30
S56	3	differential adj waveform with (malfunction\$3 defect\$3)	US-PGPUB; USPAT	OR	ON	2006/05/19 11:55
S57	9	differential adj waveform same (malfunction\$3 defect\$3)	US-PGPUB; USPAT	OR	ON	2006/05/19 11:55
S58	6	differential adj waveform same (malfunction\$3 defect\$3) not S56	US-PGPUB; USPAT	OR	ON	2006/05/19 12:05
S59	2	kobayashi.in. and multinozzle.ti.	US-PGPUB; USPAT	OR	ON	2006/05/19 11:57
S60	12	differential adj waveform same (malfunction\$3 defect\$3) not S56	EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/19 12:03
S61	12	differential adj waveform same (malfunction\$3 defect\$3) not S56 not S58	EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/19 12:03
S62	5	differential adj waveform same piezoelectric	US-PGPUB; USPAT	OR	ON	2006/05/19 15:14
S63	771	differential adj waveform	US-PGPUB; USPAT	OR	ON	2006/05/19 15:31

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S64	4	differential adj waveform with monitor\$3	US-PGPUB; USPAT	OR	ON	2006/05/19 15:17
S65	99245	("340").CLAS.	US-PGPUB; USPAT	OR	OFF	2006/05/19 15:17
S66	15	S65 and differential adj waveform	US-PGPUB; USPAT	OR	ON	2006/05/19 15:26
S67	0	status with differential adj waveform	US-PGPUB; USPAT	OR	ON	2006/05/19 15:26
S68	0	maintenance with differential adj waveform	US-PGPUB; USPAT	OR	ON	2006/05/19 15:27
S69	1	differential adj waveform.ti.	US-PGPUB; USPAT	OR	ON	2006/05/19 15:27
S70	0	differential adj waveform same ink	US-PGPUB; USPAT	OR	ON	2006/05/19 15:27
S71	0	differential adj waveform same jet	US-PGPUB; USPAT	OR	ON	2006/05/19 15:28
S72	3	differential adj waveform same nozzle	US-PGPUB; USPAT	OR	ON	2006/05/19 15:28
S73	83	differential adj waveform.clm.	US-PGPUB; USPAT	OR	ON	2006/05/19 15:35
S74	160	differential adj waveform same current	US-PGPUB; USPAT	OR	ON	2006/05/19 15:35
S75	2	differential adj waveform same current same (defect\$3 malfunction\$3)	US-PGPUB; USPAT	OR	ON	2006/05/19 15:46
S76	9	differential adj waveform same (defect\$3 malfunction\$3)	US-PGPUB; USPAT	OR	ON	2006/05/19 15:51
S77	13	differential adj waveform same (defect\$3 malfunction\$3 fail\$3 glitch)	US-PGPUB; USPAT	OR	ON	2006/05/19 15:51
S78	4	differential adj waveform same (defect\$3 malfunction\$3 fail\$3 glitch) not S76	US-PGPUB; USPAT	OR	ON	2006/05/19 17:19
S79	838	nozzle same diaphragm same voltage	US-PGPUB; USPAT	OR	ON	2006/05/19 17:25
S80	163	nozzle same diaphragm same voltage not piezoelectric	US-PGPUB; USPAT	OR	ON	2006/05/21 14:51
S81	85	nozzle same diaphragm with voltage not piezoelectric	US-PGPUB; USPAT	OR	ON	2006/05/21 14:51
S82	107	nozzle same diaphragm with voltage not piezoelectric same (ink liquid reagent sample)	US-PGPUB; USPAT	OR	ON	2006/05/21 14:52
S83	57	nozzle same diaphragm with voltage same (ink liquid reagent sample) not piezoelectric	US-PGPUB; USPAT	OR	ON	2006/05/21 15:10

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S84	1	nozzle same diaphragm with voltage same (ink liquid reagent sample) same (malfunction\$3 defect\$3)	US-PGPUB; USPAT	OR	ON	2006/05/21 15:11
S85	1	nozzle same diaphragm same voltage same (ink liquid reagent sample) same (malfunction\$3 defect\$3)	US-PGPUB; USPAT	OR	ON	2006/05/21 15:13
S86	2	nozzle same diaphragm same voltage same (malfunction\$3 defect\$3)	US-PGPUB; USPAT	OR	ON	2006/05/21 15:16
S87	6760	nozzle same (malfunction\$3 defect\$3)	US-PGPUB; USPAT	OR	ON	2006/05/21 15:16
S88	3663	nozzle with (malfunction\$3 defect\$3)	US-PGPUB; USPAT	OR	ON	2006/05/21 15:16
S89	33	nozzle with (malfunction\$3 defect\$3) same diaphragm	US-PGPUB; USPAT	OR	ON	2006/05/21 15:16
S90	18	nozzle with (malfunction\$3 defect\$3) same diaphragm same (ink sample reagent liquid fluid)	US-PGPUB; USPAT	OR	ON	2006/05/22 08:38
S91	1669	nozzle with (malfunction\$3 defect\$3) same (ink sample reagent liquid fluid)	US-PGPUB; USPAT	OR	ON	2006/05/21 15:27
S92	77	nozzle with (malfunction\$3 defect\$3) same (ink sample reagent liquid fluid) same (voltage current)	US-PGPUB; USPAT	OR	ON	2006/05/21 15:28
S93	76	nozzle with (malfunction\$3 defect\$3) same (ink sample reagent liquid fluid) same (voltage current) not S89	US-PGPUB; USPAT	OR	ON	2006/05/21 15:47
S94	27	nozzle with (malfunction\$3 defect\$3) with (voltage current) same (ink sample reagent liquid fluid) not S89	US-PGPUB; USPAT	OR	ON	2006/05/21 15:48
S95	3732	nozzle same diaphragm same (ink sample reagent liquid fluid microarray)	US-PGPUB; USPAT	OR	ON	2006/05/22 08:39
S96	763	nozzle same diaphragm same (ink sample reagent liquid fluid microarray) same voltage	US-PGPUB; USPAT	OR	ON	2006/05/22 08:39
S97	311	nozzle same diaphragm same (ink sample reagent liquid fluid microarray) same voltage same electrostatic	US-PGPUB; USPAT	OR	ON	2006/05/22 08:43
S98	33	nozzle same diaphragm with (deflect\$3) same (ink sample reagent liquid fluid microarray) same voltage	US-PGPUB; USPAT	OR	ON	2006/05/22 08:44

## EAST Search History

S99	1	("4877745").PN.	US-PGPUB; USPAT	OR	OFF	2006/05/22 08:58
S10 0	3	suction with (defect\$3 malfunction\$3) same dispenser	US-PGPUB; USPAT	OR	ON	2006/05/23 09:30
S10 1	177	suction with (defect\$3 malfunction\$3) with nozzle	US-PGPUB; USPAT	OR	ON	2006/05/23 09:30
S10 2	25	suction with (defect\$3 malfunction\$3) with nozzle and piezoelectric	US-PGPUB; USPAT	OR	ON	2006/05/23 09:33
S10 3	4	suction with (defect\$3 malfunction\$3) with nozzle with recover	US-PGPUB; USPAT	OR	ON	2006/05/23 09:33
S10 4	27	suction with (defect\$3 malfunction\$3) with nozzle with recover\$3	US-PGPUB; USPAT	OR	ON	2006/05/23 09:34
S10 5	1587	waveform with (malfunction\$3 defect\$3)	US-PGPUB; USPAT	OR	OFF	2006/05/23 11:07
S10 6	1852	waveform with (malfunction\$3 defect\$3)	US-PGPUB; USPAT	OR	ON	2006/05/23 11:07
S10 7	20	waveform with (malfunction\$3 defect\$3) same nozzle	US-PGPUB; USPAT	OR	ON	2006/05/25 16:21
S10 8	1	differential adj waveform with (malfunction\$3 defect\$3) same nozzle	US-PGPUB; USPAT	OR	ON	2006/05/23 11:24
S10 9	12	waveform with (malfunction\$3 defect\$3) same nozzle	EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/23 11:25
S11 0	0	differential adj waveform with (malfunction\$3 defect\$3) same nozzle	EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/24 17:36
S11 1	2	waveform with (malfunction\$3 defect\$3) with current same nozzle	US-PGPUB; USPAT	OR	ON	2006/05/23 11:25
S11 2	8	(differential adj waveform derivative near2 waveform) with (malfunction\$3 defect\$3 fail\$3)	EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/24 17:47
S11 3	10	(differential adj waveform derivative near2 waveform) with (malfunction\$3 defect\$3 fail\$3)	US-PGPUB; USPAT	OR	ON	2006/05/25 09:00
S11 4	0	(differential adj waveform derivative near2 waveform) with (malfunction\$3 defect\$3 fail\$3)	USOCR	OR	ON	2006/05/25 08:59
S11 5	10	(differential adj waveform derivative near2 waveform) with (malfunction\$3 defect\$3 fail\$3)	US-PGPUB; USPAT	OR	ON	2006/05/25 09:00

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S11 6	23	(differential adj waveform derivative near2 waveform) same (malfunction\$3 defect\$3 fail\$3) not S115	US-PGPUB; USPAT	OR	ON	2006/05/25 09:00
S11 7	1390	electrode and electrostatic and (malfunction\$3 defect\$3 fail\$3) and diaphragm	US-PGPUB; USPAT	OR	ON	2006/05/25 10:55
S11 8	556	electrode and electrostatic and (malfunction\$3 defect\$3 fail\$3) and diaphragm and nozzle	US-PGPUB; USPAT	OR	ON	2006/05/25 10:55
S11 9	106	electrode and electrostatic and (malfunction\$3 defect\$3 fail\$3) with nozzle and diaphragm	US-PGPUB; USPAT	OR	ON	2006/05/25 10:55
S12 0	25	electrode and electrostatic and (malfunction\$3 defect\$3 fail\$3) with nozzle and diaphragm and waveform	US-PGPUB; USPAT	OR	ON	2006/05/25 10:55
S12 1	11	electrode and electrostatic and (malfunction\$3 defect\$3 fail\$3) with nozzle same waveform and diaphragm	US-PGPUB; USPAT	OR	ON	2006/05/25 11:13
S12 2	10	electrode and electrostatic with (diaphragm elastic flexible) and (malfunction\$3 defect\$3 fail\$3) with nozzle same waveform	US-PGPUB; USPAT	OR	ON	2006/05/25 11:14
S12 3	10	electrode same electrostatic with (diaphragm elastic flexible) and (malfunction\$3 defect\$3 fail\$3) with nozzle same waveform	US-PGPUB; USPAT	OR	ON	2006/05/25 11:15
S12 4	13	electrode same electrostatic with (diaphragm elastic flexible) and (malfunction\$3 defect\$3 fail\$3) same waveform	US-PGPUB; USPAT	OR	ON	2006/05/25 11:15
S12 5	3	electrode same electrostatic with (diaphragm elastic flexible) and (malfunction\$3 defect\$3 fail\$3) same waveform not S123	US-PGPUB; USPAT	OR	ON	2006/05/25 11:24
S12 6	36	electrode same electrostatic with (diaphragm elastic flexible) and (malfunction\$3 defect\$3 fail\$3) with nozzle	US-PGPUB; USPAT	OR	ON	2006/05/25 11:27
S12 7	11	electrode same electrostatic same (diaphragm) with (deflect\$3 bend\$3 deform\$5) and (malfunction\$3 defect\$3 fail\$3) with nozzle	US-PGPUB; USPAT	OR	ON	2006/05/25 11:28
S12 8	252	waveform same (malfunction\$3 defect\$3 fail\$3) with (nozzle discharg\$3)	US-PGPUB; USPAT	OR	ON	2006/05/25 17:16



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S12 9	120	waveform with (malfunction\$3 defect\$3 fail\$3) with (nozzle discharg\$3)	US-PGPUB; USPAT	OR	ON	2006/05/25 16:49
S13 0	32	waveform with (malfunction\$3 defect\$3 fail\$3) with (nozzle)	US-PGPUB; USPAT	OR	ON	2006/05/25 17:01
S13 1	5	waveform with detect\$3 near2 (malfunction\$3 defect\$3 fail\$3) with (discharge)	US-PGPUB; USPAT	OR	ON	2006/05/25 17:01
S13 2	61	waveform same (malfunction\$3 defect\$3 fail\$3) with (nozzle)	US-PGPUB; USPAT	OR	ON	2006/05/25 17:16
S13 3	61	waveform same (malfunction\$3 defect\$3 fail\$3) with (nozzle) not "I32"	US-PGPUB; USPAT	OR	ON	2006/05/25 17:17
S13 4	29	waveform same (malfunction\$3 defect\$3 fail\$3) with (nozzle) not S130	US-PGPUB; USPAT	OR	ON	2006/05/25 17:17
S13 5	14	waveform same (malfunction\$3 defect\$3 fail\$3) near3 (nozzle) not S130	US-PGPUB; USPAT	OR	ON	2006/05/26 10:05
S13 6	55	protein adj chip and nozzle and jet	US-PGPUB; USPAT	OR	ON	2006/05/26 10:05
S13 7	0	protein adj chip and nozzle and jet. ti.	US-PGPUB; USPAT	OR	ON	2006/05/26 10:05
S13 8	0	protein adj chip.ti. and nozzle and jet	US-PGPUB; USPAT	OR	ON	2006/05/26 10:05
S13 9	0	protein adj chip same nozzle same jet	US-PGPUB; USPAT	OR	ON	2006/05/26 10:06
S14 0	0	protein adj chip same nozzle same piezoelectric	US-PGPUB; USPAT	OR	ON	2006/05/26 10:06
S14 1	75	protein same nozzle same piezoelectric	US-PGPUB; USPAT	OR	ON	2006/05/26 10:06
S14 2	146	protein same nozzle same jet	US-PGPUB; USPAT	OR	ON	2006/05/26 10:29
S14 3	3	protein with (array chip matrix) same nozzle same jet	US-PGPUB; USPAT	OR	ON	2006/05/26 10:29
S14 4	33	protein with (array chip matrix) same nozzle	US-PGPUB; USPAT	OR	ON	2006/05/26 10:30
S14 5	20	protein with (array chip matrix) same nozzle and (jet piezoelectric)	US-PGPUB; USPAT	OR	ON	2006/05/26 10:31
S14 6	4928	protein with (microarray array chip matrix) and (jet piezoelectric)	US-PGPUB; USPAT	OR	ON	2006/05/26 10:31
S14 7	261	protein with (microarray array chip matrix) same (jet piezoelectric)	US-PGPUB; USPAT	OR	ON	2006/05/26 10:32